

REMARKS

Claims 9-30 are active and find support in the original claims and specification. The term “without removing an amino acid residue of said peptide or polypeptide” which appears in independent Claims 9 and 27 find support on page 6, lines 1-2, and on page 10 of the specification, and in the Figures and in the Examples. Claims 10-15 and 28-30 find support at the bottom of page 8 of the specification. Claims 16-20 find support on page 10, last two lines of the specification and Claim 21 in the paragraph bridging pages 10-11. Claims 22-26 find support in the specification on page 10. No new matter has been added.

The Applicants thank Examiners Mi and Meller for the courteous and helpful interview of May 23, 2007. The Applicants urged that removal of a fru-val residue using a carboxypeptidase did not constitute “defructosylation”. The definition of the term “defructosylation” was discussed and the Examiners indicated that they had construed this term broadly as encompassing removal of a fru-val residue from the end of an otherwise unglycosylated peptide. Possible ways to avoid the prior art, including further structural characterization of the defructosylation enzyme, were discussed.

Rejection—35 U.S.C. §103

Claims 1, 2 and 4-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001057897 (Derwent record display sheets), in view of Jones, U.S. Patent No. 5,741,491. This rejection is moot in view of the cancellation of these claims.

It would not apply to the new claims because JP 2001057897 does not disclose an enzyme that removes a fructosyl group from a fructosylated peptide or protein which is obtainable from a plant. JP 2001057897, which describes production of fru-val using carboxypeptidase, does not disclose “defructosylation” or removal of just a fructosyl group.

Carboxypeptidase is an enzyme that hydrolyzes the carboxy-terminal peptide bond of a protein or peptide, thus releasing the terminal amino acid residue. In the prior art, the amino acids are sequentially removed from the fructosylated peptide resulting in the eventual production of a fru-Val residue, or fructosylated valine. The Applicants do not regard this process as “defructosylation” since the fructosyl moiety is not removed from the terminal amino acid. Rather, the Applicants define the term “defructosylation” as making defructosylated amino acid by oxidatively decomposing or hydrolyzing a fructosyl moiety on a fructosylated peptide. Accordingly, the prior art would not apply to the new claims.

Moreover, while this document refers to serine carboxypeptidase (EC3.4.16.1) it does not indicate that this enzyme is plant-derived. Edens et al. is cited as indicating that serine carboxypeptidases are found in fungi and higher plants. Jones is cited as disclosing treatment of diabetes with *Heracleum lanatum*, a plant of the *Umbrelliae* family, and subsequently measuring HbA1c and glucose levels afterwards. However, this document does not disclose a method for defructosylated a peptide and thus cannot complement the primary reference. Accordingly, the Applicants respectfully submit that this rejection would not apply to the new claims.

Rejection—35 U.S.C. §103

Claim 3 was rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001057897, in view of Karl et al., EP 598329. This rejection is moot in view of the cancellation of Claim 3 and would not apply to the new claims for the reasons discussed above.

CONCLUSION


In view of the above amendments and remarks, the Applicants respectfully submit that this application is now in condition for allowance. Early notification to that effect is earnestly solicited.

Respectfully submitted,

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